

IN THE CLAIMS

Please amend the claims as follows:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) An apparatus for performing motion estimation, the apparatus comprising:

a first memory for storing current image data as a reference block having a predetermined size;

a second memory for storing previous image data as a search region for searching motion vectors;

~~The apparatus of claim 1, wherein the motion estimation skip unit comprises:~~

a motion compensator for obtaining the median value of the motion vectors of the previous image data, performing the motion compensation, and obtaining the maximum value of the SAD values; and

a skip determiner for comparing the motion compensation ~~estimation~~-result with the maximum value of the SAD values to determine whether or not the motion estimation is skipped;

a motion estimation unit for receiving the current image data and the previous image data from the first and second memories to perform motion estimation for the current image data;

a comparator for outputting the minimum value of estimation results output from the motion estimation unit as a final motion estimation result;

a multiplexer for selecting and outputting any one of the compensation result generated from the motion compensator and the final estimation result generated from the comparator based on the determination result of the skip determiner;

an address generator for outputting addresses related to the motion estimation and the motion compensation to the first and second memories; and

a controller for controlling the operation of the motion compensator and the skip determiner and the operation of generating the addresses in the address generator based on the determination of the skip determiner.

4. (Original) The apparatus of claim 3, wherein the motion compensator comprises a processing element for performing motion estimation of the current image data.

5. (Original) The apparatus of claim 3, wherein the skip determiner is constituted as a comparator for comparing the motion compensation result with the maximum value of the SAD values.

6. (Original) The apparatus of claim 3, wherein if the motion compensation result is smaller than the maximum value of the SAD values, the skip determiner sets the value of an estimation skip flag so that the motion estimation is skipped and the motion compensation is performed, and if the motion compensation result is greater than or equal to the maximum value of the SAD values, the skip determiner sets the value of the estimation skip flag so that the motion estimation is performed.

7. (Original) The apparatus of claim 6, wherein the multiplexer receives the value of the estimation skip flag as a signal for selecting any one of the estimation compensation result generated from the motion estimation skip unit and the motion estimation result generated from the motion estimation unit.

8. (Original) The apparatus of claim 3, wherein operations related to the motion compensation and the motion estimation are performed in each of macro blocks.

9. (Original) The apparatus of claim 8, wherein the motion estimation unit subsamples data in the search region in the ratio of 2:1 so that only half of a bit of data is selected from each line of the macro block.

10. (Original) The apparatus of claim 8, wherein the macro blocks used in operations related to motion estimation and motion compensation are each positioned on the left side of the reference block, on the reference block, and on the right-and-up side of the reference block.

11. (Currently Amended) The apparatus of claim ~~13~~12, wherein the motion estimation unit comprises a plurality of processing elements for estimating a motion of the current image data.

12. (Original) A method of performing motion estimation, the method comprising:

(a) receiving motion vectors of previous image data;

(b) obtaining the median value of the motion vectors;

- (c) receiving current image data;
- (d) compensating for motion of the current image data based on the median value of the motion vectors;
- (e) receiving SAD values of the previous image data and obtaining the maximum value of the SAD values;
- (f) comparing the motion compensation result with the maximum value of the SAD values;
- (g) skipping motion estimation of the current image data and outputting the motion compensation result if the motion compensation result is smaller than the maximum value of the SAD values in step (f); and
- (h) performing motion estimation for the current image data if the motion compensation result is greater than or equal to the maximum value of the SAD values in step (f), and outputting the motion estimation result.

13. (Original) A computer-readable recording medium for storing a program for executing the method of claim 12.